CLAIMS

What is claimed is:

1. A method of optical communication comprising:

providing an optical signal;

providing a plurality of data signals;

passing a plurality of desired portions of the optical signal using a plurality of respective optical modulators, the desired portions individually having at least one predefined wavelength;

optically modulating the desired portions of the optical signal using the respective optical modulators and responsive to respective ones of the data signals; and

outputting the desired portions of the optical signal to an optical communication medium after the modulating.

2. The method of claim 1 wherein the modulating comprises frequency modulating the desired portions of the optical signal using the respective optical modulators.

3. The method of claim 1 wherein the passing comprises passing the desired portions of the optical signal having respective different wavelengths.

4. The method of claim 1 wherein the receiving comprises receiving within the optical modulators having respective different pass bands, and the passing and the modulating comprise passing and modulating the desired portions of the optical signal within the respective pass bands of the modulators and not passing and not modulating other portions of the optical signal outside of the respective pass bands.

5. The method of claim 4 further comprising filtering the other portions of the optical signal using the optical modulators.

6. The method of claim 1 wherein the receiving comprises receiving substantially an entirety of the optical signal within the optical modulators.

7. The method of claim 1 further comprising:
dividing the optical signal into the desired portions; and
providing the desired portions to the respective modulators.

8. The method of claim 1 further comprising combining the desired portions of the optical signal before the outputting, and wherein the outputting comprises outputting the desired portions to the optical communication medium comprising an optical fiber.

9. A method of optical communication comprising:
providing an optical signal;
providing a data signal;
receiving the optical signal and the data signal within an optical modulator;
encoding the data signal upon at least a portion of the optical signal by optically modulating at least the portion of the optical signal using frequency modulation; and
outputting at least the portion of the optical signal to an optical communication medium after the encoding.

10. The method of claim 9 wherein the receiving comprises receiving the optical signal within the optical modulator comprising a filter having a pass band, and the encoding comprises frequency modulating at least the portion of the optical signal within the pass band.

11. The method of claim 10 further comprising filtering other portions of the optical signal outside of the passband using the optical modulator.

12. The method of claim 9 wherein the receiving comprises receiving at least the portion of the optical signal within an optical modulator having a filter frequency, and the encoding comprises frequency modulating the filter frequency.

13. An optical communications method comprising:

dividing a source-light beam into plural carrier-light beams;

modulating said carrier light-beams responsive to respective data signals to yield plural encoded-light beams; and

combining said encoded-light beams to yield a multiplexed-light beam.

14. The method of claim 13 further comprising injecting said multiplexed-light beam into an optical communications channel.

15. The method of claim 13 wherein said encoded-light beams have different respective encoded-light wavelengths, said combining step involving frequency-multiplexing said encoded-light beams.

16. The method of claim 15 wherein said carrier-light beams share a common carrier wavelength.

17. The method of claim 15 wherein said carrier-light beams have different respective carrier-light wavelengths.

18. The method of claim 17 wherein each carrier-light wavelength of a respective carrier-light beam is closer to the encoded-light wavelength of the respective encoded-light beam than to the encoded-light wavelength of any other of said encoded-light beams.

19. An optical communication system comprising:

a plurality of optical modulators adapted to optically couple with an optical signal and an optical communication medium, and wherein individual ones of the optical modulators are configured to:

receive a data signal;

pass a desired portion of the optical signal having at least one predefined wavelength;

optically modulate the desired portion of the optical signal having the at least one predefined wavelength responsive to the data signal; and

output the desired portion of the optical signal after the modulation for application to the optical communication medium.

20. The system of claim 19 wherein the optical modulators are configured to frequency modulate the desired portions of the optical signal.

21. The system of claim 19 wherein the optical modulators are configured to pass the desired portions of the optical signal having respective different wavelengths.

22. The system of claim 19 wherein the optical modulators have respective different pass bands, and the optical modulators are configured to pass and to modulate the desired portions of the optical signal within the respective pass bands and to not pass and to not modulate other portions of the optical signal outside of the respective pass bands.

23. The system of claim 22 wherein the optical modulators are configured to filter the other portions of the optical signal.

24. The system of claim 19 wherein the optical modulators are individually configured to receive substantially an entirety of the optical signal.

25. The system of claim 19 further comprising a divider configured to divide the optical signal into the desired portions and to provide the desired portions to respective ones of the optical modulators.

26. The system of claim 19 further comprising a combiner configured to receive the desired portions of the optical signal from the optical modulators, to combine the desired portions, and to provide the desired portions to the optical communication medium comprising an optical fiber after the combining of the desired portions.

27. An optical communications system comprising:

a light source for providing a source-light beam;

an optical divider for converting said source-light beam into plural carrier-light beams;

a modulator array for converting said carrier-light beams into encoded-light beams, said modulator including means for receiving plural data signals, said modulator array converting each of said carrier-light beams into a respective one of said encoded-light beams as a function of a respective one of said data signals; and

an optical combiner for combining said encoded-light beams to yield a multiplexed-light beam.

28. The system of claim 27 wherein said optical combiner injects said multiplexed-light beam into an optical communications channel.

29. The system of claim 27 wherein each of said encoded-light beams has a respective encoded-light wavelength, no two of said encoded light-beams having the same encoded-light wavelength, said optical combiner frequency multiplexing said encoded-light beams to yield said multiplexed-light beam.

30. The system of claim 29 wherein said carrier-light beams share a common carrier-light wavelength.

31. The system of claim 29 wherein said plural carrier-light beams have respective carrier-light wavelengths, no two of said carrier-light beams having the same carrier-light wavelengths.

32. The system of claim 31 wherein the carrier-light wavelength for each of said carrier-light beams is closer to the encoded-light wavelength of the respective encoded-light beam than to the encoded-light wavelength of any other encoded-light beam.